Project Title Purchase of Four 35 Foot Low-Floor Battery Electric Zero Emission Transit Buses including All Necessary Infrastructure Charging Equipment for One Overnight Charging Location at the Nevada County Operations Center and One On-Route Overhead Charging Station Sufficient for Four Vehicles.

Applicant Information

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Budget Summary

EPA Funding Requested	Voluntary Cost Share	Total Project Cost
$5,367,555	**$0**	**$5,367,555**

Project Period

Project Start: August 1, 2020 Project End: August 31, 2024

Project Description

The proposed project is for the purchase of four 35-foot battery electric zero emission transit buses and all associated charging infrastructure, both overnight trickle and on-route fast charging. This purchase will replace four 30-foot diesel cutaway buses and supports expansion of core bus service.

Project Location

The project is located entirely in the Western Nevada County (CA) Ozone Nonattainment Area, situated in the Sierra Nevada foothills.

Workplan

Section 1 – Project Summary and Approach

A. Ongoing, Significant Emissions Reductions and Consideration of Other Activities
    a. The County of Nevada Transit Services Division is proposing the purchase of four 35 foot low floor transit style Zero Emission Buses and all related slow and fast vehicle charging infrastructure to replace four 30 foot El Dorado Aero Elite 290 diesel cutaways. The proposed vehicles will be used entirely within the Western Nevada County Ozone Nonattainment Areas, serving the communities of Grass Valley and Nevada City along the SR49/SR20 corridor.

    Staff is proposing to purchase four Gillig 35 foot Battery Electric Low Floor Plus buses via options on the Commonwealth of Virginia contract (IFB #2712), three Charge Point CPE 250 charging stations and two Power Block chargers as well as an yet to be identified manufacturer overhead on-route charging apparatus.

    The proposed project is consistent with current California Air Resources Board requirements for California transit agencies to move to zero emissions fleets by 2026 (small rural agencies) and supports the overarching goal of reducing statewide emissions by replacing diesel engine vehicles with zero emission battery electric vehicles. The proposed project is consistent with County goals as well as the capital replacement plan included in the Western Nevada County Transportation Development Plan Update (2016).

    As a public transit provider the Transit services division is always searching for ways to improve operations and customer service. The proposed project will provide significant operational benefits which in turn will provide enhanced customer service and improved overall customer satisfaction and ultimately emissions reductions.

    By replacing the current cutaway vehicles with low floor transit style buses staff expects to see significant reductions in route running times, between 5 and 10 minutes per run, due to improved wheelchair loading and unloading times. The current average load and unload time for wheelchairs is approximately 5 minutes for each, with the proposed ZEB low floor transit style buses that duration drops to between 30 – 90 seconds. This equates to a potential savings of up to 90 minutes (1.5 WC/run*12 runs*5 min) per route per day of scheduled time on route which is typically spent idling. Based on the current projections of using the ZEB vehicles on two main routes, the reduced idling time per day could reach a maximum of 180 minutes per day. This reduction in run times will lead to improved on-time performance which may lead to enhanced ridership.

    The improvement in on-time performance and the ease of boarding and alighting for all passengers is expected to improve customer satisfaction, reduce potential passenger conflict due to delays and improve employee morale.

The proposed project also supports the implementation of service enhancement recommendations from the Western Nevada County Transportation Development Plan Update (WNCTDP) which include enhanced service frequency within the core nonattainment areas of Grass Valley and Nevada City. The WNCTDP recommends increasing headway frequency from 60 minutes to 30 minutes on routes 1 and 4, which specifically serve Nevada City and Grass Valley. Implementation of these frequency improvements have the potential to increase transit ridership by up to 65 percent annually (approximately 132,000 annual unlinked passenger trips) based on past empirical data.

B. Emission Inventory and Progress Towards Attainment
   a. This project proposes to replace four 30 foot El Dorado Aero Elite diesel cutaway buses used for daily public transit operations which span up to 14 hours per day. The current vehicles have the following emissions:

			Average	45 MPH	Total	
Annual Emissions Per Bus =			181.8	5.4	187.2	lb NOx/yr
		=	0.5	0.1	0.6	lb ROG/yr
			Average	45 MPH	Total	
Total Annual Emissions =			727.1	21.6	748.7	lb NOx/yr
			1.8	0.4	2.2	lb ROG/yr

Total emissions reduction specific to the replaced vehicles is 100 percent based on emissions for Zero Emission Buses. These emission reductions will be ongoing and are complaint with California Air Resource Board guidelines.

Additional expected co-benefits are ridership increases which will lead to emissions and Vehicle Miles Traveled reductions. Based on data obtained from prior service years wherein transit provided 30 minute headways on routes 1 and 4, as is intended with the proposed project vehicles, staff estimates the following emissions and VMT reductions.

Passenger VMT Reduction: 115,374
GHG Emissions Reductions: 50 Metric Tons

These figures are based on a three year project cycle with an estimated ridership increase of 105,000.

C. Innovative Emission Reductions
   a. This project utilizes the most current, efficient user friendly products available to meet the specified emissions reduction targets. As a rural transit agency there are limited opportunities to directly and significantly impact emissions within our community. The transit bus fleet is the largest and most impactful component of vehicle emissions within the County. The proposed bus replacement project

allows us to meet emissions reduction objectives through the purchase of Zero Emission Buses while also helping to improve operating efficiency and overall customer satisfaction.

By reducing fleet vehicle emissions and potentially increasing transit ridership through increased frequency of service we have the ability to meet needed emissions reductions, reduce community VMT and create a countywide acceptance of public transit which will possibly reduce future dependence on personal vehicles.

This project meets current CARB transit fleet requirements for emissions reductions and supports the capital replacement recommendations included in the Western Nevada County Transportation Development Plan Update. In addition, the proposed project has been included within the infrastructure design aspects of the newly built Nevada County Operations Center, meaning that the electrical charging infrastructure requirements are already addressed and planned for within that project.

D. Roles and Responsibilities
   a. CARB will accept the grant and monitor compliance by Northern Sierra AQMD with all grant requirements.

      Northern Sierra AQMD will pass grant funds to the County of Nevada Transit Services Division and monitor compliance with sub-awardee grant requirements.

      As the sub-grantee the County of Nevada Transit Services Division is responsible for the identification of the desired vehicles which meet the Zero Emissions Bus requirements, ensuring all Federal procurement procedures are followed in accordance with best practices, procurement of all project related equipment and proper administration of all grant funds in accordance with grant guidelines.

Section 2 – Community Benefits, Engagement and Partnerships

A. Community Benefits
   a. Western Nevada County is located in the heart of California's Gold Rush country. Western Nevada County is bounded by Sierra County to the north, Placer County to south, and Yuba County to the west. Western Nevada County covers approximately 618 square miles, ranging in elevation from near sea level in the southwest to roughly 5,500 feet at Bowman Lake in the northeast. Western Nevada County is traversed by three main highways: State Route (SR) 49 running north-south, SR 20 running east-west, and SR 174 running between Grass Valley and Colfax, just south of the county boundary.

      The main economic and population centers in Western Nevada County consist of Nevada City and Grass Valley, which are situated below the heavy snows of the Sierra Nevada. Nevada City serves as the county seat. The only other incorporated

community in Western Nevada County is Grass Valley, located approximately 4 miles southwest of Nevada City. There are also a number of important residential areas in the outlying portions of the study area, including Lake Wildwood, Penn Valley, Lake of the Pines, Chicago Park, and North San Juan. Significantly, much of Western Nevada County is designated as low-income according to AB1550 mapping.

The proposed project will significantly reduce emissions related to transit fleet vehicles operating within the effected nonattainment zone thereby improving air quality within the Western Nevada County region. These reductions will be ongoing for the life of the purchased vehicles, estimated at a minimum of 14 years.

In addition to the specific transit fleet emissions reductions there will be co-benefits associated with improved transit operations. The expected co-benefits of the proposed project are as follows.

Improve transit system efficiency: Given the reduction of time required for passenger loading and unloading, specifically wheelchair passengers, it is estimated that system on-time performance may improve up to 20 percent. This would equate to improving on-time performance from approximately 60-65 percent currently to 80-85 percent.

Additionally, with the reduction of time required to load and unload passengers staff estimates a reduction of up to 180 minutes per day of diesel engine idling on the routes specified to utilize the project vehicles.

Another projected benefit to the community is the fact that, with the addition of the project vehicles, staff intends to increase route frequency from 60 minute headways to 30 minute headways on core routes within Nevada City and Grass Valley. This frequency increase is projected to result in a ridership increase of up to 105,000 passenger trips annually which will may result in a reduction of up to 115,374 vehicle miles traveled per year. This amounts to a reduction of up to 50 metric tons of GHG.

Ultimately the proposed project will help to create a modern efficient transit fleet which is instrumental in the improvement of the Western Nevada County transit system. The zero emissions buses will provide a comfortable, time saving way for members of low-income designated communities to travel for essential life functions. The system efficiency improvements will make transit a reasonable, attractive alternative to driving a personal vehicle for current non-transit users.

B. Community Engagement and Partnerships
    a. The proposed project is supported by the Transit Services Commission, which is the policy board for the County of Nevada Transit Services Division, and the ATCI-MAPCO/Social Services Transportation Advisory Council.

If approved, the purchased vehicles will undergo exterior wraps which will be based on art designs produced by local Western Nevada County artists. The bus wrap project is being done in partnership with the Nevada County Arts Council and will be annual competitive program which includes design submissions which are then submitted to the community for final design choice. In this way the community will have direct input into the overall appearance of the transit fleet.

Section 3 – Project Sustainability

A. The proposed project is the first step for the County of Nevada Transit Services Division in achieving the meeting of the CARB zero emissions goal for transit fleets. This project will allow the division to complete an initial procurement large enough to purchase multiple vehicles, which is necessary to implement the battery electric technology. This project will also provide a sufficient delay to allow for improvements in zero emission cutaway vehicles for them to be viable long-term fleet solutions. Going forward staff will identify a staggered fleet replacement schedule which will minimize the annual financial burden to the greatest extent possible, while still meeting the mandated timeline to achieve a zero emissions fleet.

   In partnership with the Nevada County Transportation Commission, Northern Sierra Air Quality Management District and Caltrans the transit services division will develop a capital replacement plan utilizing multiple funding sources including: State Local Transportation Funds, State Transit Assistance funds, Low Carbon Transit Operations Program funds and Federal Transit Administration grant opportunities.

   In addition to the purchase of zero emissions transit fleet, the transit services division will seek to continually enhance the transit services provided to the communities of Western Nevada County. These service enhancements will strive to remove gaps in service, broaden appeal and encourage system connectivity with neighboring communities.

Section 4 – Environmental Results – Outcomes, Outputs and Performance Measures

A. Expected Project Outputs and Outcomes
   a. The proposed project is designed to replace four 30 foot El Dorado Aero Elite diesel cutaway medium-duty transit buses with four Gillig 35-foot Battery Electric Low Floor Plus zero emission buses.

      The four El Dorado cutaways are currently in revenue service approximately 14 hours per day and have the following emissions outputs.

Anticipated Outputs and Outcomes	
Outputs	**Outcomes**
Replace four 30 foot El Dorado Aero Elite diesel cutaway buses with battery electric zero emissions buses	Annual diesel cutaway NOx Emissions Reduced: 748.7 lbs./year Annual diesel cutaway ROG emissions Reduced: 2.2 lbs./year
	Lifetime diesel cutaway NOx Emissions Reduced: 5241.0 lbs. (7 yr. ULB) Lifetime diesel cutaway ROG emissions Reduced: 15.4 lbs. (7 yr. ULB)
	Annual Diesel Fuel Reduced: 20,258 gallons
	Lifetime Diesel Fuel Reduced: 141,809 gallons

B. Performance Measures
   a. Project performance measure may include, but not be limited to, the following.
      i. Oversight of the procurement process via the County of Nevada Purchasing Division;
      ii. Tracking and reporting expenditures to all required agencies;
      iii. Providing accurate and achievable milestone progress reports as compared to projected milestones;
      iv. Providing visual and written documentation of receipt of vehicles, including start date of service.

C. Performance Plan
   a. In conjunction with California Air Resources Board, the Northern Sierra Air Quality Management District and the County of Nevada Purchasing Division the Transit Services Division will follow established Federal Transit Administration (FTA) procurement guidelines for the procurement of transit vehicles via piggyback on an established contract which has assignable options. Once the proposed vehicles are received and placed in service the emissions reductions will be realized as the current vehicles are removed from service.

D. Timeline and Milestones

	Milestone Description	Est. Comp. Date
1.	RFP/IFB OUT FOR BID	12/12/19
	This is a procurement through the assignment of existing contracting rights (piggyback) with Commonwealth of Virginia (IFB#2712).	
2.	CONTRACT AWARDED	August 2020

	Commonwealth of Virginia awarded the contract on MM/DD/YYYY to Gillig LLC. County of Nevada Transit Services Division will be assigned existing contract rights (piggyback) on the Commonwealth of Virginia's procurement.	
3.	NTP-Gillig LLC	August 2020
4.	FIRST VEHICLE DELIVERED	August 2022
5.	ALL VEHICLES DELIVERED	October 2022
6.	CONTRACT COMPLETE *(Use date of final payment)*	December 2022

Section 5 – Programmatic Capability and Past Performance

A. Management, Completion and Reporting Requirements

a. With respect to grant management, CARB has accepted several U.S. EPA grants in the past three years, including: Section 105 Air Pollution Control Financial Assistance Grant (Grant Number A-00901315), PM 2.5 Monitoring Network Grant (Grant Number PM-00T41301), and the State Clean Diesel Grant (Grant Number DS-99T62501). Each of these recent grants represents a continuation of a multi-year, multi-million dollar grant from U.S. EPA. For each grant, CARB has completed all grant agreement terms and completed (or expects to complete) the approved work plans to expeditiously apply funds to shared U.S. EPA and CARB air quality goals. CARB has documented progress on these grants through submittal of required reports and inputting collected data into state and national databases, as appropriate per the grant terms.

   Additionally, CARB has extensive experience implementing multi-million-dollar incentives programs, such as the Lower-Emission School Bus Program, the Carl Moyer Memorial Air Quality Standards Attainment (Moyer) Program, Goods Movement Emission Reduction (Goods Movement) Program, the Air Quality Improvement Program (AQIP), and the Providing Loan Assistance for California Equipment (PLACE) Program. CARB's experience in these programs has established solid working relationships with Air Districts as well as engine/equipment and retrofit manufacturers and vendors necessary for successfully implementing the proposed project.

b. The Northern Sierra AQMD has administered a $2.5 million 2015 U.S. EPA Targeted Airshed Grant to change out 600 wood stoves and a $3.2 million 2018 U.S. EPA Targeted Airshed Grant to change out 300 wood stoves, all in the Portola, California $PM_{2.5}$ nonattainment area.

c. The sub-recipient, County of Nevada transit Services Division, does not have any similar Federally funded assistance agreements within the past three years. The Transit Services Division is a recipient of FTA 5311 funds on an annual basis. Staff has submitted a successful FTA 5339 Bus and Bus Facilities grant for $500,000 for the construction of bus wash facilities. This grant award is currently pending.

B. Not Applicable
C. Staff Expertise
    a. The project lead at CARB is Earl Withycombe, Air Resources Engineer. He has experience in administering several U.S. EPA Section 105 Border Activity grants relating to Salton Sea and monitoring activities.

       The project lead at the Northern Sierra AQMD is Ms. Gretchen Bennitt, Executive Director. She has experience in administering two U.S. EPA Targeted Airshed grants for wood stove changeouts in the Portola $PM_{2.5}$ nonattainment area.

       The project lead for the County of Nevada is Mr. Robin Van Valkenburgh, Transit Services Division Manager. He has been a Transit Manager/Planner for the past 15 years with various organizations. During this time he has successfully applied for and was awarded an FTA 5309 Bus and Bus Facilities grant in the amount of $18 million (2012 – Butte County Association of Governments) for the construction of a new Transit Operations and Maintenance Facility; multiple transit bus procurements and various technology procurements.

Section 6 – Leveraged Funding

The County of Nevada is not proposing any leveraged funding.

Section 7 – Budget

A. Expenditure of Awarded Funding
    a. Per County of Nevada policy upon notification of grant award, the Transit Services Manager will submit a grant acceptance Board of Supervisors agenda item to formally accept the grant award and allow expenditures against the grant funds. At this time a separate fund account will be established by the County to ensure transparency and simplify interest tracking.
    b. Once a Notice to Proceed has been issued for the procurement of the vehicles all invoices will be processed by the Transit Services Division accounting tech in accordance with established County policy and grant procedures. All expenditures will require signature by the Transit Services Manager.
    c. Each invoice submitted for payment by the Transit Services Division will be reviewed by the County auditor/controllers office for accuracy and eligibility.
    d. Milestone progress reports will be submitted and will include any invoices processed during the reporting period.

B. Budget Table: Other – Cost-pass through to the District

Line Item & Itemized Cost	EPA Funding	Non-Federal Share
Equipment		
4 – 35 foot Battery Electric Low Floor Plus buses ($856,815/bus + tax)	$3,648,305	
3 – CPE 250 (62.5kw) chargers @ $53,750/unit	$161,250	
2 – Power Block (156kW DC charger)+3 depot stations @ $129,000/unit	$258,000	
1 – Overhead charging Unit (TDB)	$500,000	
Total Equipment	**$4,567,555**	
Contractual		
Charging equipment installation (Ops Facility+Transit Center)	$800,000	
Total Contractual	**$800,000**	
Total Pass-through to the District	**$5,367,555**	
Total Project Cost	**$5,367,555**	